



Appendix A

Developing the Strategy vision

Substantial change will influence WA's strategic position and infrastructure demand over the next 20 years. The Strategy is underpinned by an assessment of WA's long-term strategic outlook to provide insight into the state's infrastructure needs and priorities and inform the Strategy vision. Because the future is unpredictable, IWA applied a scenario-planning approach to identify global megatrends and local drivers of change likely to impact WA. This included identification of risks and the development of a series of scenarios. This process helped to pinpoint opportunities and challenges and identify potential infrastructure responses. Deloitte Access Economics assisted IWA with scenario planning and the findings are documented in *State Infrastructure Strategy scenario planning*.¹

The following pages provide an overview of the global megatrends and 6 opportunity areas that underpin the Strategy vision.

Global megatrends – disruption and the impetus for change

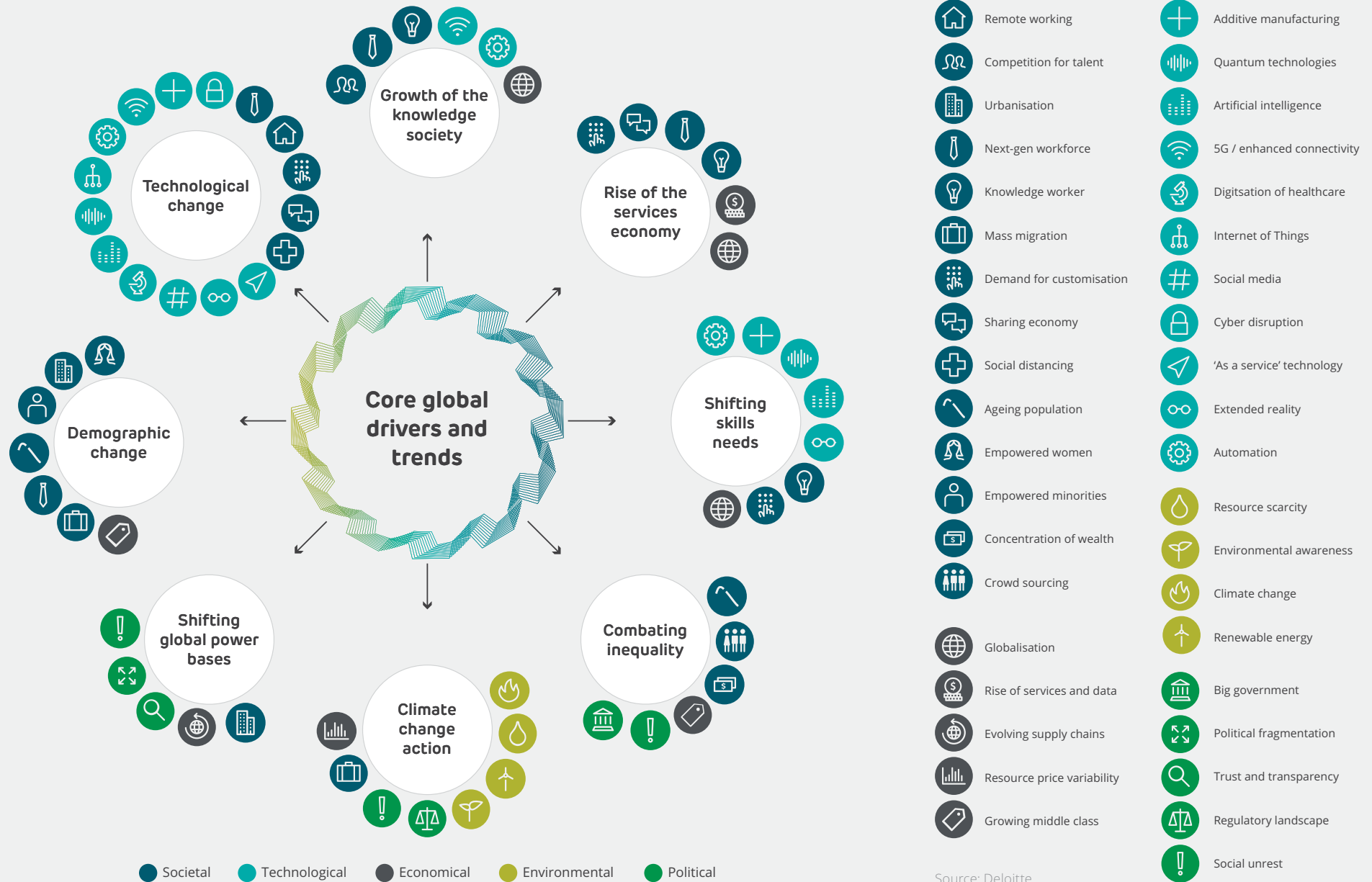
WA's society, economy and environment are part of an interconnected national and global economy. Thirty-nine identified trends have been grouped into 8 overarching global megatrends that will shape infrastructure demand and the vision for WA (Figure A1).² These trends represent challenges and opportunities for WA and provide insight into ways to build the resilience of infrastructure to change. While in some instances they increase exposure to shock events, such as cyberattacks and extreme weather events, they can also drive progress and innovation, such as increased security capacity due to the growing service economy and implementation of renewable energy to mitigate climate change.

These megatrends are:

- **Demographic change:** By 2040, the United Nations predicts that almost 20% of the world's population will be older than 60.³ The world is also getting richer, with 9 out of 10 of the next billion new middle-class consumers expected to live in Asia.⁴ Developing economies are driving the rise in global middle classes and demand for higher-quality goods and services, such as tourism and clean food.
- **Technological change:** At current and expected rates of technological change, governments, corporations and communities are likely to require full digitisation to prosper. Advances in technology are changing the way our economies and day-to-day lives function. Adoption of new technology and digital business models has been accelerated by the move to online interaction in response to the COVID-19 pandemic.
- **Growth of the knowledge society:** Intellectual property and human capital are highly prized, more so than land, labour or financial assets, and have significant implications for the way we create and capture value. An estimated 86% of jobs created in Australia in the next decade are likely to be knowledge worker jobs.⁵
- **Rise of the services economy:** Service-based value chains are rising in importance and value, growing the global trade in services, which is intrinsically linked to the growing knowledge society. With the rise in the services economy, investment has shifted from physical assets to research and development, data, software, patents and new business models.
- **Shifting skills and needs:** The services economy values cognitive and interpersonal skills, and places a premium on technology, cybersecurity and artificial intelligence. The workforce will need to reskill as digital literacy and interpersonal and cognitive skills become increasingly important in knowledge economy jobs.
- **Combating inequality:** Inequalities in wealth, power and opportunity are accelerating, particularly as middle-class incomes stagnate or decline. The growth of the knowledge society must bring with it equity of access to prevent social fragmentation.
- **Climate change action:** Demand for action on climate change brings opportunities for new value chains, particularly in energy, with the next 20 years set to bring significant shifts in renewable energy, water efficiency and urban design. Increasing mitigation initiatives are driving new industries and technologies, as is the process of adapting to more extreme temperatures and more frequent and more severe weather events such as bushfires, cyclones, heatwaves, floods and storm surges.
- **Shifting global power bases:** Combined, China and India's economic force continues to influence the global balance of power. By 2025, one-fifth of the world's working-age population will be Indian.⁶ New economic drivers are shifting the balance of corporate and commercial power in favour of technology firms. The emergence of China on the world stage is also influencing the global balance of power and geopolitical competition has the potential to increase volatility.



Figure A1: Global megatrends and drivers of change



Source: Deloitte

Strategic economic opportunities

Economic drivers have had large impacts in shaping WA's economic and population growth trajectory. The resources sector in particular has dominated the state's development over the past 60 years. IWA expects that this sector will continue to play a major role in shaping WA over the next 20 years. Whether it will generate the same rate of growth as has been seen in recent years is open to debate. Taking opportunities and setting policies that will see greater economic diversification will be important in shaping how WA performs economically in the next 2 decades. IWA has identified 6 strategic economic opportunities representing promising drivers for WA's long-term economic diversification and growth. These opportunities emerge where global megatrends and the state's economic strengths intersect, and form the foundation of the Strategy's vision and underlying infrastructure planning assumptions of the Strategy.

A global location of choice

WA can take advantage of its liveability, stable governance and strong economic outlook to position the state as a global location of choice to live, work, visit and invest, accelerating skilled worker immigration. WA's high standard of living is partly due to the quality and accessibility of its healthcare and education services. Recreational activities are also key attractors, with unique cultural offerings and world-class natural assets contributing to the state's enviable lifestyle. These attributes are complemented by comparatively affordable housing that makes WA an attractive option for international migrants. WA already has the highest concentration of international migrants of any Australian jurisdiction and is highly rated in global liveability assessments.⁷ With the global shift towards the knowledge and service economy, WA must attract and retain skilled migrants to diversify human capital and drive productivity. Infrastructure will be required to improve the liveability and attractiveness of places with high demand for skilled workers, and ensure communities remain people-focused places that support physical and mental wellbeing.



It will be especially important for regional areas to attract skilled migrants to address skills shortages, diversify human capital and drive productivity. Regional centres with high liveability, meaningful employment options and inclusive communities will be well positioned to do this. Locations close to Perth that have an affordable cost of living, availability of health and education services, comfortable climate and diverse lifestyle options are likely to have strong appeal to a broader cross-section of migrants. More remote centres may require a targeted approach to migration attraction, underpinned by high-quality employment and career opportunities, and essential services and infrastructure, such as digital connectivity, health, education and affordable housing.

Serving the emerging consumer class

WA can capitalise on a range of strengths to meet the rising demand from emerging global middle classes for higher-value tourism, agriculture and food, international education, and cultural goods and services. As large developing countries such as China and India increase in prosperity, changing tastes and expectations regarding nutrition, recreation and education will continue to emerge, resulting in increased demand for new goods and services such as tourism and clean foods. Over the last 10 years, WA has significantly grown the value of non-mining merchandise to ASEAN (Association of Southeast Asian Nations) countries and China, and has built a brand as a provider of clean and premium food exports. There are substantial opportunities to capitalise on natural attractions and the hospitality industry to serve domestic and international demand for travel experiences. Infrastructure will be required to support the development of world-class tourism experiences in highly desirable strategic locations that appeal to high-value interstate and international tourists. Enhancing the infrastructure that brings WA's produce to emerging markets and supports efficient supply chains is seen as a priority.

International and domestic tourism

The Perth region (including Rottnest Island), as the metropolitan centre of the state and the entry hub for tourists, has been identified as one of 4 'jewels in the crown' of WA tourism. The other 3 are located in regional WA: the South West, the Ningaloo Coast (including Exmouth) and the Kimberley (including Broome). Regional areas have a significant opportunity to continue building WA's tourism industry by attracting interstate and international visitors to world-class tourism experiences. A coordinated approach should be taken when investing in infrastructure to improve access to attractions through complementary supporting infrastructure such as visitor facilities, car parks, signage and information.

Agriculture and food

Areas with available agricultural land, water, existing infrastructure and human capital will be well positioned to supply growing markets for high-quality, niche agrifood exports. The South West and Great Southern regions have well-established agrifood industries, and the Kimberley and Peel can take advantage of their agricultural land and water to expand agricultural and processing activities. WA also has growing trade surpluses in crustacean and live animal exports.

International education

WA's international education sector generates significant export income for the state, with India, China and Malaysia combined comprising almost 40% of the market.⁸ To grow this market, WA will need to develop its tertiary education sector so it can offer safe study environments that deliver flexible and collaborative teaching models to increase international rankings and unlock new opportunities.

Promoting and leveraging Aboriginal cultural heritage and enterprise

Aboriginal people are the Traditional Owners and Custodians of WA, and the state bears evidence of Aboriginal occupation dating back at least 50,000 years.⁹ Around 39% of WA's Aboriginal and Torres Strait Islander population live in the Perth metropolitan region, while the remainder are dispersed throughout the state.¹⁰ This wealth of heritage, culture and land management knowledge is a unique asset. IWA's vision is that Aboriginal heritage flourishes as part of WA's vibrant cultural identity, and is recognised domestically and internationally as part of WA's brand. Aboriginal collaboration and knowledge should underpin new social enterprises, business opportunities and WA's land stewardship to guide WA to a more inclusive and sustainable future. Infrastructure offers a range of opportunities to contribute to Aboriginal empowerment, build self-determination and improve outcomes for Aboriginal people.

WA will be able to capitalise on growing demand for goods and services that leverage Aboriginal enterprise, culture and heritage or are provided by Aboriginal business. Regions such as the Kimberley and Pilbara, that have a high proportion of the state's Aboriginal population and operating businesses, and significant natural and cultural attractions, are already well placed to meet growing demand for Aboriginal cultural experiences that can drive growth of tourism business opportunities.

A leader in the transition to net zero emissions technologies

As the world transitions to greater use of renewable energy, WA's comparative advantage in solar and wind energy can enable cheap power for energy-intensive industries. Infrastructure is critical in supporting the growth of the renewable energy industry. As a global energy powerhouse, WA possesses the know-how, capital and impetus to transition its domestic industry to net zero emissions by 2050 and become a global renewable energy generator, complementing its existing global energy exports with renewable energy exports.

Regional WA has the potential to realise these opportunities, especially in areas that offer a strong mix of solar and wind energy such as the Pilbara, Gascoyne and Mid West regions. Production of renewable hydrogen for domestic and export markets is also a significant opportunity, particularly in locations that can leverage infrastructure, such as the South West Interconnected System and North West Interconnected System, and industrial land and common user ports, to support economies of scale and global supply chains.

Approaching the technology frontier

WA can leverage its internationally recognised expertise in its mining, equipment, technology and services; petroleum engineering and technical services; and medical research and life sciences sectors. These efforts will drive research, defence technology, innovative product development and advanced manufacturing. WA is known as an incubator of knowledge and innovation for resource extraction, and the associated value-adding services

and products including equipment manufacturing, computer and software systems design, telecommunications and remote operations. Building on these skills, the state is well placed to create a robust technology startup and investment ecosystem. Infrastructure will be required to support growth in science and innovation, technology and advanced manufacturing.

The opportunity to drive innovation and competitiveness also extends to areas where there are growing industry clusters specialising in mining and petroleum technologies and radio astronomy. Establishing innovation hubs in larger centres such as Bunbury and Karratha will provide platforms for industry, academia and government to collaborate, accelerate research and development, and create opportunities for regional development and specialisation. WA will also need to invest in the implementation of the Industrial Lands Strategy including development and expansion of industrial and technology precincts, and in strategic enabling infrastructure to facilitate private investment.

Value-adding for strategic commodities

WA has a comparative advantage in resources and primary industries. With stable institutions, a favourable operating environment and rich resource endowment. The state's extensive solar, wind and wave resources together with its vast land area give WA the potential to provide sources of reliable renewable power which could support energy-intensive green manufacturing processes. Infrastructure such as that which improves the efficiency of global supply chains and builds capacity in strategic resource and agricultural areas supports the realisation of these opportunities.

The state's agriculture and food sector has the potential to expand its export footprint through increasing productivity in high-value products. Emerging advancements in lithium battery technology align well with the opportunity to process more of WA's raw materials in the future. Areas supporting supply chains for mineral and agricultural commodities, which can provide access to cheap and reliable power, industrial land and export infrastructure, will be in a position to take advantage of these opportunities.